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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,002	01/02/2001	Kenji Nakamura	15162/03050	9833

24367 7590 11/06/2003

SIDLEY AUSTIN BROWN & WOOD LLP
717 NORTH HARWOOD
SUITE 3400
DALLAS, TX 75201

EXAMINER

SELBY, GEVELL V

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 11/06/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/753,002

Applicant(s)

NAKAMURA, KENJI

Examiner

Gevell Selby

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/5/01.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other:

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09753002, filed on 1/02/01.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: "#32". A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1 - 8, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higashino, US 6,330,055, in view of Muramatsu et al., US 5,563,677.**

In regard to claim 1, Higashino, US 6,330,055, discloses a distance measuring device comprising:

“a distance measuring sensor (see column 2, lines 22-25) for measuring a plurality of regions of an object region and outputting measurement data (see column 3 lines 38-43);

a detector for detecting an unmeasurable region within the plurality of measurement regions based on the measurement data output from said distance measuring sensor (see column 6, lines 23-27);

[The judging means is the detector for detecting an unmeasurable region, area. The unmeasurable area is where output of the LED is too small or the object is located too far away to identify accurately the position of the spectral center of the image, see column 7, lines 47-51.]

Higashino, US 6,330,055, uses a default value when an unmeasurable region is detected, so it lacks:

a calculator for calculating a spacing on the object corresponding to the unmeasurable region detected by said detector; and

a creator for creating distance data of the unmeasurable region based on the distance data of the measurable region among the plurality of distance measuring regions and the spacing calculated by said calculator.

Muramatsu et al., US 5,563,677, discloses an auto focusing apparatus with a distance measuring device comprising:

a calculator for calculating a spacing on the object detected by said detector (see column 6, lines 13-20); and

[It is inherent that there is a calculator for to calculate the spacing and depth of the two measurable points.]

a creator for creating distance data of a region based on the distance data of the measurable region among the plurality of distance measuring regions (see column 5, lines 64-67 and fig 5, steps 1 and 2) and the spacing calculated by said calculator (see column 6, lines 13-20).

The measuring device of Higashino, US 6,330,055, could be modified to use the method of Muramatsu et al., US 5,563,677, (see column 5, line 60 to column 6, line 20 and figure 5) to generate distance measurement of the unmeasurable region by using the calculator and creator instead of using a default value. Muramatsu et al., US 5,563,677, uses this method to provide an auto focusing apparatus which can reliably prevent the focus from deviating greatly relative to an object for which focusing will occur (see column 2, lines 11-15).

It would have been obvious to a person skilled in the art at the time of invention to modify Higashino, US 6,330,055, in view of Muramatsu et al., US 5,563,677, to have:

a calculator for calculating a spacing on the object corresponding to the unmeasurable region detected by said detector; and

a creator for creating distance data of the unmeasurable region based on the distance data of the measurable region among the plurality of distance measuring regions and the spacing calculated by said calculator

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in order to prevent the focus from deviating greatly relative to an object for which focusing will occur.

In regard to claim 2, Higashino, US 6,330,055, in view of Muramatsu et al., US 5,563,677, discloses a distance measuring device according to claim 1 wherein,

“said detector detects the unmeasurable region by determining a reliability of the distance data output from the distance measuring sensor (see Higashino: column 6, lines 23-33).”

In regard to claim 3, Higashino, US 6,330,055, in view of Muramatsu et al., US 5,563,677, discloses a distance measuring device according to claim 1 wherein,

“said creator creates the distance data of the unmeasurable region based on the distance data of the measurable regions adjacent to the unmeasurable region (see Muramatsu: column 6, lines 13-20).”

[Figure 3a illustrates three regions (e2, e3, and e4) in the unmeasurable region beyond the threshold value and distances of the two adjacent regions, e1 and e5, are used to create the distance data for the unmeasurable region.]

In regard to claim 4 and 5, Higashino, US 6,330,055, in view of Muramatsu et al., US 5,563, 677, discloses a distance measuring device according to claim 3 wherein,

“said creator creates the distance data of the unmeasurable region based on a distance difference of the measurable regions adjacent to both sides of the unmeasurable region” and “determines whether or not the distance data of the unmeasurable region is created by comparing the distance difference of the

measurable regions to a specific value (see column 5, lines 65-67 and column 6, lines 13-20).”

[The creator compares the distance difference of each of the regions to find the closest point. Then it uses the distance differences to determine if the points are at the same depth.]

In regard to claim 6, Higashino, US 6,330,055, in view of Muramatsu et al., US 5,563,677, discloses the distance measuring device of claim 1, wherein,

“said creator determines whether or not the distance data of the unmeasurable region is created by comparing the spacing of the unmeasurable region calculated by said calculator to a specific value (see column 6, lines 13-20).”

[The creator determines whether to create the new data measurement, D_o , from the measurable points on each side comparing the distance between the two points to a predetermined value to see if they are close enough.]

In regard to claim 7, Higashino, US 6,330,055, in view of Muramatsu et al., US 5,563,677, discloses the distance measuring device of claim 1, further comprising:

“a luminance calculator for calculating a luminance of the distance measuring regions, and wherein said creator determines whether or not the distance data of the unmeasurable region is created in accordance with the difference in the luminance of the unmeasurable region and the luminance of the measurable regions (see Muramatsu: column 6, lines 20-40).”

[Contrast or intensity of reflection can be used in the weighted average.]

In regard to claim 8, Higashino, US 6,330,055, in view of Muramatsu et al., US 5,563,677, discloses the distance measuring device of claim 1, further comprising:

“a region selector for selecting the distance measuring regions including at least three or more measuring points from among a plurality of measuring points (see Higashino: column 6, lines 29-33), and wherein said detector for detecting an unmeasurable region within the selected measuring regions (see Higashino: column 6, lines 23-27).”

In regard to claim 10, Higashino, US 6,330,055, in view of Muramatsu et al., US 5,563,677, as explained in regard to claim 1 is also applicable here. Higashino, US 6,330,055, in view of Muramatsu et al., US 5,563,677, discloses a camera provided with a distance measuring device (see Higashino: column 4, line 1-4) comprising:

“a distance measuring sensor (see Higashino: column 2, lines 22-25) for measuring a plurality of regions of an object region and outputting measurement data (see column 3 lines 38-43);

a detector for detecting an unmeasurable region within the plurality of measurement regions based on the measurement data output from said distance measuring sensor (see Higashino: column 6, lines 23-27);

[The judging means is the detector for detecting an unmeasurable region, area. The unmeasurable area is where output of the LED is too small or the object is located too far away to identify accurately the position of the spectral center of the image, see column 7, lines 47-51.]

a calculator for calculating a spacing on the object corresponding to the unmeasurable region detected by said detector (see Muramatsu : see column 6, lines 13-20); and

[It is inherent that there is a calculator for to calculate the spacing and depth of the two measurable points.]

a creator for creating distance data of the unmeasurable region based on the distance data of the measurable region among the plurality of distance measuring regions (see Muramatsu: see column 5, lines 64-67 and fig 5, steps 1 and 2) and the spacing calculated by said calculator (see column 6, lines 13-20);

a focus adjuster for adjusting the focus of a photographic lens (see Muramatsu: column 2, line 30-37);

and a controller for recognizing a photographic object corresponding to the distance data of the measurable region and the created distance data of the unmeasurable region lines and for controlling said focus adjuster in accordance with the recognition result (see Muramatsu: column 4, line 62 – column 5, line 19).”

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higashino, US 6,330,055, in view of Muramatsu et al., US 5,563,677, as applied to claim 1 above, and further in view of Tanaka et al., US 6,433,824.

In regard to claim 9, Higashino, US 6,330,055, in view of Muramatsu et al., US 5,563,677, discloses a camera provided with a distance measuring device (see Higashino: column 4, line 1-4) comprising:

“a distance measuring sensor (see Higashino: column 2, lines 22-25) for measuring a plurality of regions of an object region and outputting measurement data (see column 3 lines 38-43);

a detector for detecting an unmeasurable region within the plurality of measurement regions based on the measurement data output from said distance measuring sensor (see Higashino: column 6, lines 23-27);

[The judging means is the detector for detecting an unmeasurable region, area. The unmeasurable area is where output of the LED is too small or the object is located too far away to identify accurately the position of the spectral center of the image, see column 7, lines 47-51.]

a calculator for calculating a spacing on the object corresponding to the unmeasurable region detected by said detector (see Muramatsu : see column 6, lines 13-20); and

[It is inherent that there is a calculator for to calculate the spacing and depth of the two measurable points.]

a creator for creating distance data of the unmeasurable region based on the distance data of the measurable region among the plurality of distance measuring regions (see Muramatsu: see column 5, lines 64-67 and fig 5, steps 1 and 2) and the spacing calculated by said calculator (see column 6, lines 13-20);

a finder for viewing the object region;

[It is inherent that the camera has a viewfinder.]

and a controller for recognizing a photographic object corresponding to the distance data of the measurable region and the created distance data of the unmeasurable region (see column 4, line 62 – column 5, line 19).”

The camera disclosed by Muramatsu et al., US 5,563,677, lacks,

“a display for displaying a range corresponding to each distance measuring region within the view of the finder;

and a controller for controlling display on said display in accordance with the recognition result.”

Tanaka et al., US 6,433,824, discloses a camera comprising,

“a display for displaying a range corresponding to each distance measuring region within the view of the finder (see column 7, lines 5-10);

and a controller for controlling display on said display in accordance with the recognition result (see column 7, lines 33-56).”

It would have been obvious to a person skilled in the art at the time of invention to modify Muramatsu et al., US 5,563,677, in view of Tanaka et al., US 6,433,824, to have:

“a display for displaying a range corresponding to each distance measuring region within the view of the finder;

and a controller for controlling display on said display in accordance with the recognition result”

in order to display the picture processes by the camera on the LCD screen (see column 7, lines 5-10).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following art discloses distance measuring devices:

Yamaguchi et al, US 5,929,980

Homma et al., US 5,051,767

Kiri et al., US 6,154,253

Sato, US 5,305,046

Kageyama, US 6,038,405

Kageyama et al., US 5,960,219


Nakamura, US 6,642,727.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gevell Selby whose telephone number is 703-305-8623. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andy Christensen can be reached on 703-305-9644. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

gvs


VU LE
PRIMARY EXAMINER